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Les adverbes *zài* du chinois mandarin et *encore* et le système des temps verbaux

Marta Donazzan, Sylviane R. Schwer & Lucia M. Tovenà

Journées de Linguistique d'Asie Orientale,
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- The **aim** of this talk is to compare the semantics and distribution of the Mandarin adverb *zài* and the French adverb *encore* (Renaud and Luo, 1987).
 - We will characterize *encore* and *zài* as two repetitive adverbs, sharing the same presuppositional semantics (section 1);
 - We will show that the interpretive and distributional differences between them can be described as terms of constraints on the temporal configuration and aspectual setting of their host sentences (section 2);
 - In order to capture the differences and similarities in distribution between the two adverbs, we take advantage of a lattice organization of a Reichenbachian formal model description of tense (section 3).
- The representation of the two adverbs *zài* and *encore* in a formal model will also show the limitations of a description of the temporal system of Mandarin Chinese based exclusively on topological relations between points in time: the aspectual properties of the sentence and of the predicate appear to be crucial for computing tense relations, and call for a revisitation of Reichenbach's original system (section 4).

1 Background

We adopt the following working definition for adverbs of repetition.

An adverb of repetition does not modify in a direct way the assertive content of the sentence in which it occurs, but adds to its presupposed content the piece of information that there exists (at least) another event that temporally precedes the asserted one and shares with it some relevant property. (Tovenà and Donazzan, 2008)

We adopt, after Reichenbach, the notations :

- S for the moment of Speech
- R for the moment of Reference
- E_1 for the moment of the asserted event
- E_2 for the moment of the presupposed event
- ' - ' for the precedence relation
- ‘,’ for the simultaneously or contemporary relation
- ‘?’ for the no-constraints relation

The names of the readings:

- | | | |
|-----|---|--------------|
| (1) | Marie a encore lavé la chemise Mary washed the shirt again | REPETITIVE |
| (2) | Marie est encore en train de laver des chemises Mary is still washing shirts | CONTINUATIVE |
| (3) | Marie a encore lavé une chemise Mary washed one more shirt | INCREMENTAL |
| (4) | Mary washed the shirt clean again | RESTITUTIVE |

- The examples in (1)–(4) are representative of the variety of eventive pre-suppositions that can be triggered by adverbs of repetition. Differences can be due to the aspectual properties of the host sentence, and also come from the referential properties of arguments or complements, cf. (5).

- | | |
|-----|---|
| (5) | a. Marie chante encore une chanson paillarde Marie sings one more bawdy song |
| | b. Marie chante encore la chanson paillarde Marie sings the bawdy song again |

- Further differences concern the temporal location of the presupposed event [E_2] wrt the moment of speech [S], cf. (6)–(7).

- | | |
|-----|--|
| (6) | a. I will go there at noon, and tomorrow I will go there again |
| | b. I went there yesterday, and tomorrow I will go there again |
| (7) | I will go there again tomorrow |

2 Two adverbs of repetition

2.1 The adverb *zài* of Mandarin Chinese

- The adverb *zài* is usually described as satisfying two major distributional constraints (Ma, 1985; Li, 1982; Liu, 1999; Alleton, 1972; Renaud and Luo, 1987; Donazzan and Tovenà, 2007)

1) on context: *zài* would be restricted to irrealis/future contexts, see examples (8)

2) on aspect: *zài* cannot modify non-eventive predicates, see (9).

- (8) a. *Wǒ míngtiān huì zài qù.*
 I tomorrow MOD ZAI go
 I will go again tomorrow.
- b. **Wǒ zuótiān zài qù (le).*
 I yesterday ZAI go PERF
 (I went again yesterday)

- (9) **Zhāngsān zài lèi.*
 Zhangsan ZAI tired
 (Zhangsan is still tired)

- In (Donazzan and Tovenà, 2007), *zài* is analysed as an additive particle specialised for the temporal domain and the irrealis flavour is argued to come from constraints on the temporal location of the event: the asserted event must follow the reference time: $[R - E_1]$.

This constraint explains the contrast in (8). The order with respect to utterance time [S] is not restricted (10).

- (10) a. *Nà shíhou, wǒ bu zhīdào wǒmen huì zài jiànmiàn.*
 That time, I NEG know we MOD zài
 meet
 At that time, I didn't know that we would meet again.
- b. *Nà shíhou, wǒ bu zhīdào wǒmen zuótiān huì zài jiànmiàn.*
 That time, I NEG know we yesterday
 MOD zài meet
 At that time, I didn't know that yesterday we would meet again.

- *zài* is subject to the ban on homogeneous predicates in general, not just on statives, cf. the progressive form in (11).

- (11) *Wo zài zài pǎobù.
 I ZAI zai run
 (I'm still running)

⇒ Donazzan and Tovenà (2007) derive it from the temporal constraint on the positioning of the asserted event, which requires the left boundary of the event to be clearly identifiable.

A modal can provide an eventive interpretation by localising the stative predicate *shēngqì* in the future wrt utterance time $[S - E_1]$, and this makes modification by *zài* possible, cf. (12).

- (12) a. Zhāngsān huì zài shēngqì.
 Zhangsan MOD zài être-fâché
 Zhangsan va se fâcher encore (Z. will be angry again)
 b. *Zhāngsān zài shēngqì
 Zhangsan zài être-fâché
 (Zhangsan est encore fâché) (Z. is still angry)

• The presupposed event must be located before the asserted event $[E_2 - E_1]$, but it does not undergo ordering constraints wrt reference time $[E_2?R]$ and $E_1?R]$ or utterance time $[E_2?S]$ and $E_1?S]$. However, satisfying presupposition by verification or by accommodation comes together with strong and different ordering preferences (see also (6-7)).

1 – When an antecedent can be found in the context, the presupposition is satisfied by verification. The presupposed event precedes reference time $[E_2 - R]$ in (13), but it may follow it $[R - E_2]$ as in (14).

- (13) Qùnián wǒmen zài Běijīng jiànmiàn le, jīnnián
 Last year we in Beijing meet ASP this year
 kěndìng huì zài jiànmiàn.
 for sure MOD zài meet
 We met in Beijing a year ago and we will certainly meet again this year.

- (14) Zhě zhǒng cài hěn hǎochī, chī le yī cì,
 This kind dish very tasty eat ASP one time
 (kěndìng) huì zài chī!
 for-sure MOD zài eat
 This dish is very tasty, once you have tried it, you will eat it again!

2 – In the absence of overt antecedents, the presupposition is satisfied by accommodation. In this case, the presupposed event is always located before reference time $[E_2 - R]$, cf. (10). If speech time precedes reference time $[S - R]$, then the presupposed event precedes them both $[E_2 - S - R]$.

2.2 The adverb *encore* of French

- The adverb *encore* has aspectual and iterative uses.¹ Tovenà and Donazzan (2008) have proposed a unified analysis

1– the semantic core of the adverb is characterised as a repetitive operator on an ordered domain;

2– the domain on which the repetition is computed is responsible of the different interpretations of the sentence. In this talk, we will present mainly the differences with respect to *zài*.

- Like *zài*, *encore* is sensitive to the aspectual properties of the sentence, but this sensitivity translates in a broader range of readings.

Like *zài*, *encore* conveys a *repetitive* when the host sentence describes an event (15b), and an *incremental* one when there is an explicit measure (15c). However, contrary to *zài*, *encore* can also modify statives predicates, in which case it conveys a *continuative* reading (15a).

- | | | | |
|------|----|--|--------------|
| (15) | a. | Jean est encore sous le choc. Jean is still shocked | CONTINUATIVE |
| | b. | Jean a encore raté l'avion. Jean has missed the plane again/once more | REPETITIVE |
| | c. | Jean courra encore deux kilomètres. Jean will run two more km | INCREMENTAL |

The specificity of the incremental reading is that the measure in the description of the asserted event $[E_1]$ does not enter the presupposition used to identify the presupposed event $[E_2]$. This characteristic, shared by *encore* and *zài*, opposes them to *again*.

- (16) Zhāngsān yào zài pǎo liǎng gōngmǐ.
Zhangsan MOD ZAI courir deux km
John will run two more km

- (17) John will (again) run two kilometers again

- (18) John courra à nouveau deux kilomètres
John will run two kilometers again

¹See (Muller, 1975; Hoepelman and Rohrer, 1980; Martin, 1980; Nef, 1981; Borillo, 1984), among others.

- Another difference between *encore* and *zài* is that *encore* is not restricted to contexts where the asserted event follows the reference time (that is $[E_1?R]$), compare (19) with (8).

- (19) a. J'irais encore demain
I will go again tomorrow
- b. J'y suis allée encore hier
I went again yesterday

3 Representing the distribution of *zài* and *encore*

3.1 Reichenbach's system of temporal determination

Reichenbach (1947) developed a formal system for representing temporal interpretation of verb forms that rests on

- three points: *E* for Event, *S* for Speech, and *R* for Reference, the point that mediates the relationship between the other two; and
- two relations: *precedes* (marked '-') and *is simultaneous* (marked ',').

These two relations enables to situate any two points on a line. In (20) we show the three possible localisation of (a) *S* with respect to *R*, and (b) *E* with respect to *R*. These configurations are organized into a chain, that fits with the temporal orientation from the past to the future.

- (20) a. $R-S \longrightarrow R, S \longrightarrow S-R$
- b. $E-R \longrightarrow E, R \longrightarrow R-E$

Table 1 gives the combinations of the two series, that is, Reichenbach's tense theory.

| | R-S | R, S | S-R |
|------|--|----------------------------------|---|
| E-R | E-R-S eut marché avait marché | E-R, S a marché | E-S-R ; E, S-R ; S-E-R (E?S) -R aura marché |
| E, R | E, R-S marchait marcha | E, R, S marche | S-E, R marchera |
| R-E | R-E-S ; R-E, S ; R-S-E R- (E?S) marcherait | R, S-E marchera va marcher | S-R-E |

Table 1: Resulting configuration of the localization of R wrt S and E wrt R and French verb forms

The lattice in Figure 3.1 represents the same information in a different way, in terms of a Generalized Delannoy lattice (Autebert and Schwer, 2003). It is obtained by applying a system of rewriting rules to the start configuration $E-R-S$ that corresponds to the situation where the event is further in the past (Schwer, 2007).

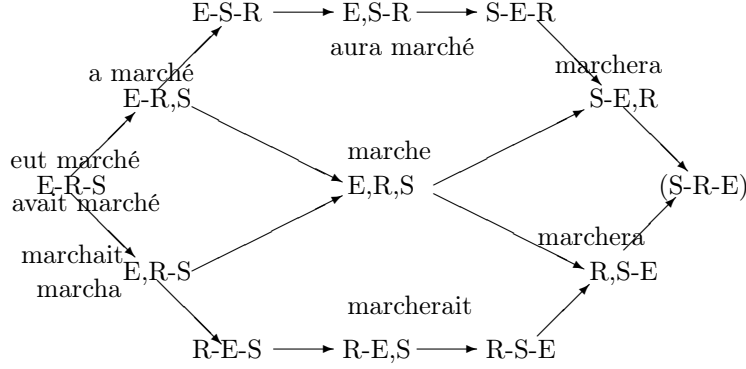
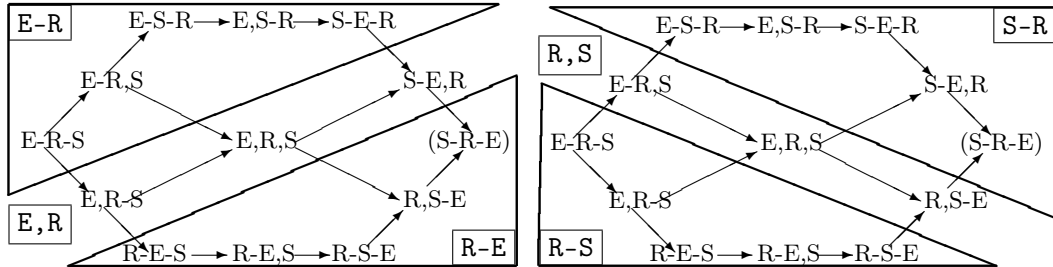


Figure 1: The lattice with the French verb forms

The two relations (20) seen on the lattice:



The three regions defined
by E wrt R

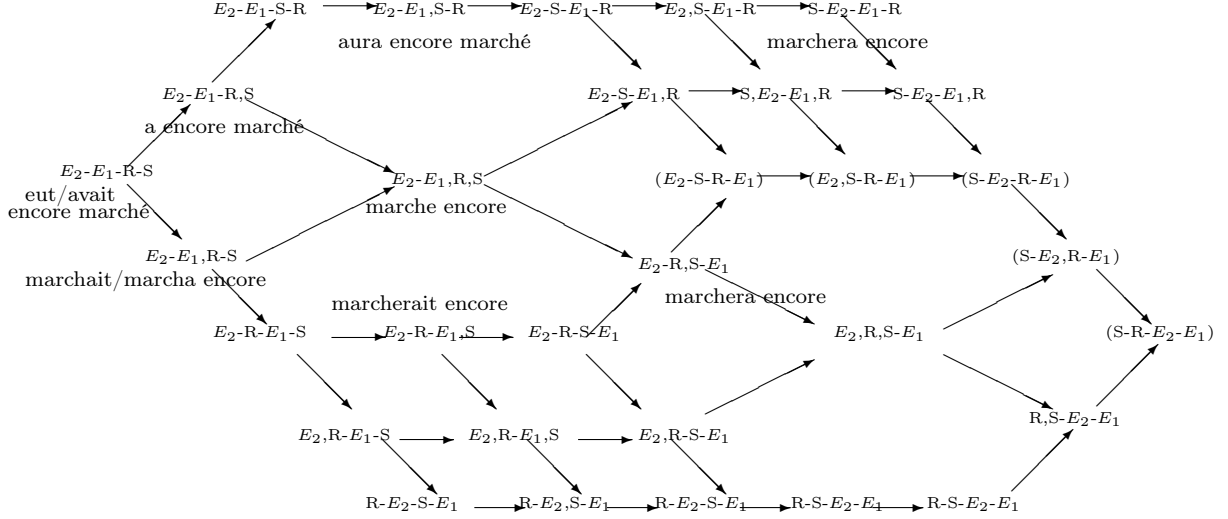
The three regions defined
by S wrt R

Figure 2: How to recover the 9 cells of the table

3.2 Inserting the presupposed event inside the lattice

- add a forth point to locate the presupposed event E_2
- join the order constraint E_2-E_1
- Use the same rewriting rule as given for the preceding lattice

Then, we get the 31 elements in Figure 3

Figure 3: The lattice of *encore* with the French verb forms

Description:

- The adverb *encore* can be used in all the situations described by the points in the lattice in Figure 3.
- The image of *zài* on the same lattice is restricted to a portion of the lattice, individuated below the lowest line in fig.4.

1. **Uncontroversial, negative characterization:** *zài* is OUT whenever the asserted event E_1 precedes the reference point R (i.e. $(E_1 - R)$)
2. **Positive characterisation:** there is a shared characterization according to which *zài* is IN whenever the asserted event E_1 follows the reference point R (i.e. $R - E_1$).

Differences arise in how to complement this characterization.

– modal analyses (e.g. Liu (1999)): E_1 must follow the time of speech S (i.e. $\neg(E_1 - S)$).

Problem: all events located before or cotemporal with S are assumed to have taken place in the speaker's world, but the same does not hold for events after S : however, examples in (10) show that futurity must be kept distinct from realization of the event in the actual world.

– the temporal analysis (Donazzan and Toven, 2007): $E_1 - S$ is possible, because the relevant constraint is set on the relation between E_1 and R .

3.3 Controversial cases

- It appears that the area between the lines in Figure 4 cannot be settled exclusively in temporal terms.

The configurations are characterized by the relation E_1, R . In fact, this is due by the fact that relata of Reichenbach's relations are not points in the mathematical sense but are in fact *granules* defined by (Schwer, 2010). The true semantics of the relation of simultaneity is in fact the following :

$$X, R = \neg[(X - R) \vee (R - X)]$$

This semantics enables ',' to subsume the inclusion, the equality and the overlapping between different extension types of eventualities (points, intervals, sequences).

- Example: the prospective reading of the configuration of the present:
 $E_2 - E_1, R, S$

(21) Jean est encore fatigué en ce moment/# demain.

(22) Jean chante encore en ce moment/demain.

(23) Jean tombe encore en ce moment/# demain.

- Interpretive constraints can be placed on the aspectual structure (stative (21) vs. eventive (22) predicates) and on the agentive role of the subject/predictability of the event (cf. (22) vs. (23)), and their realization depend ultimately on the aspectual system of a language.

(24) John sings again (#right now/tomorrow)

- In Chinese, Bare Predicates (Lin, 2003) behave like present tenses in this respect (see also Donazzan (2008)).

(25) Zhāngsān (#míngtiān/xiànzài) hěn lèi
Zhangsan (tomorrow/right now) very tired
Zhangsan is very tired (#tomorrow/now)

(26) Zhāngsān (míngtiān/#xiànzài) chǎng gē.
Zhangsan tomorrow/right now sing song
Zhangsan sings tomorrow/#right now.

(27) Zhāngsān (#míngtiān/??xiànzài) ái dǎ
Zhangsan tomorrow/right now suffer beat
Zhangsan is beaten (#tomorrow/??right now)

- In our framework, a solution is to revise Reichenbach’s original system by extending the granule R into the interval $R_d - R_f$ and to substitute the relation $R_d - E$ to $R - E$.

This amendement allows us to account for the empirical fact that *zái* is grammatical when a prospective interpretation of Bare Predicates is possible.

(28) ?*Zhāngsān* (*míngtiān*) *zài* *chǎng* *gē*.
 Zhangsan tomorrow ZAI sing song
 Zhangsan is singing once more tomorrow.

(29) **Zhāngsān* (*míngtiān*) *zài* *ái* *dǎ*
 Zhangsan tomorrow ZAI suffer beat

The new constraint $R_d - E$ is compatible with the prospective present that can be depicted as $R_d, S - E_1, R_f$.

4 Conclusions and further issues

- We have shown that *encore* and *zài*, albeit sharing the same semantics of repetitive adverbs, differ in their distribution on the basis of temporal and aspectual constraints.
- We have represented the distribution of the two adverbs on a lattice generated by Reichenbach’s topological tense relations. Our main result here is to have shown that the three possible relations between R and E_1 describe three different way of acting of *zài*
 $R - E_1$ as the zone associated with no constraint for *zài*. This area was given by (Donazzan and Tovená, 2007).
 – $E_1 - R$ is outside zone of possibilities of application of *zài*
 – E_1, R is a border line. Each configuration has to be analyzed either with constraints that are not temporal (aspectual, modal, ...). A particular aspectual constraint is concerned with the temporal extension of R .
- The configuration $E_2 - E_1, R, S$ inside the border zone includes the present-prospective case, for which the refined relation $R_d, S - E_1, R_f$ plays a crucial rôle.

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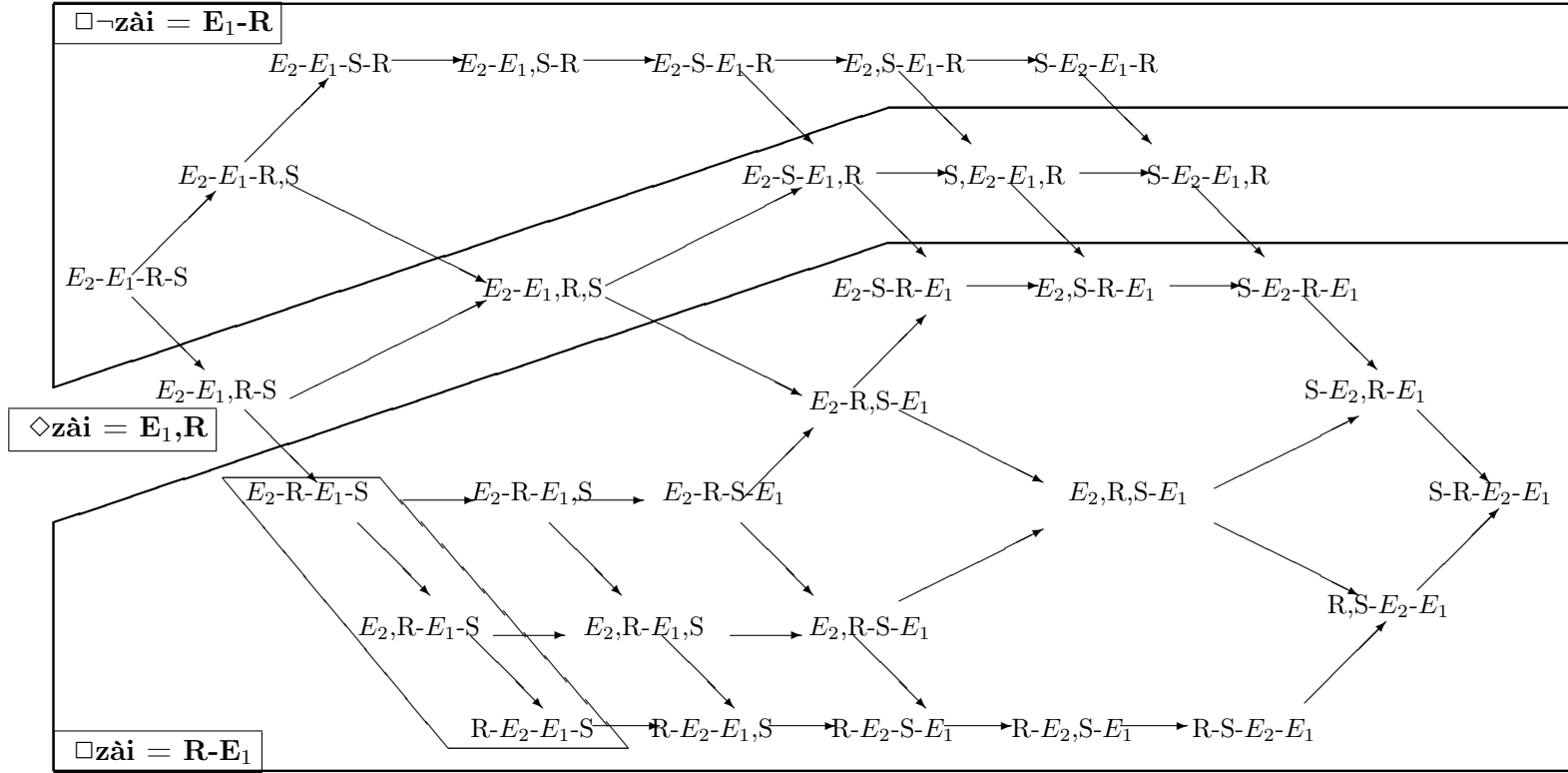


Figure 4: *Zài* in the lattice with a sequence of two events